



MUSIC MACHINE

 **commodore**  **64**



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THE MUSIC MACHINE

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INTRODUCTION

The MUSIC MACHINE cartridge you have purchased allows you to play your Commodore 64 computer like a musical instrument, using the music synthesizing capability of this computer. Your computer keyboard is transformed into a synthesizer keyboard, complete with percussive accompaniment.

The cartridge has been designed with flexibility in mind. Rather than having the variety of musical tones being one of a number of preset selections, there are a number of parameters you can mix and match, allowing you many combinations of sound type, special effects, and keyboard playing style.

KEYBOARD

The keyboard is laid out in three sections:

- 1) Keyboard section
- 2) Left and right control section
- 3) Percussion section

1. The keyboard section is laid out like a piano or organ, starting from the note 'C' (the Q key) going on up through one and a half octaves to 'A' (the \uparrow key). The sharps and flats are selected by hitting the appropriate key on the uppermost row (for example, 'C#' is the 2 key).

2. The left and right control sections consist of three keys each, and are located for playing convenience below and at the left and right of the playing keyboard. The left set of control keys are used to select the KEYBOARD mode (the C = key) and EFFECT (the SHIFT key), and the WAVEFORM (the Z key). The right set of control keys are used to change the starting OCTAVE of the keyboard (the CRSR keys) and the number of VOICES that are played.

3. The percussion section consists of the four function

keys positioned to the right of the keyboard. These control (from top to bottom):

ON/OFF (f1)

RHYTHM SELECT (f3)

TEMPO UP (f5)


TEMPO DOWN (f7)

GETTING STARTED

Making sure your Commodore 64 computer is turned off, insert the MUSIC MACHINE cartridge, and turn on the computer. A musical staff and the mode indicators should appear on the screen. If they do not, turn off the computer, reinsert the cartridge and turn the computer on again.

The Indicators:

The number to the right of the message OCTAVE indicates the starting octave of the playing keyboard. 'Middle C' is the lowest note in octave 4. The highest octave is 6, and the lowest octave is 1.

The symbol to the right of the message WAVEFORM indicates the type of sound which will be produced. The symbol shown is the shape of the sound waves. The " " indicator, for example, is the sawtooth waveform, which because of its abrupt shape (not smooth) gives a rather tinny sound.

The test next to the message EFFECT shows which special effect (if any) is in operation on the notes played.

The number to the right of the message VOICES indicates the number of voices which can be heard simultaneously. For example, when in "1" voice mode, if a note is played, the next note will stop the first note, since only one voice will be heard at a time. See the section on Selecting Number of Voices.

The text next to the message **KEYBOARD** indicates the way the keyboard will be interpreted. For example, whether a note will decay, or will be continuous for as long as a key is held down, etc.

The five lines across the screen are the musical staff. If, for example, you now press the note 'C' (the Q key) on the playing keyboard, you'll see that the note is displayed on the screen. If you now press the 'D' (the W key), you'll see that the musical staff moves over, and the note is also displayed.


CHANGING OCTAVE


When your computer is first turned on with the **MUSIC MACHINE** cartridge installed, the **OCTAVE** indicator will show "4". This means that the playing keyboard will start at 'C' in octave 4 and go up through 'A' in octave 5.


If you play note 'C' for example, then press '**OCTAVE DOWN**' (the **CRSR** down key), and play 'C' again, you should hear the note is now one octave lower. Also, the **OCTAVE** indicator should show "3". The octave can be adjusted from 1 (the lowest) to 6 (the highest).


TIP: Often it is possible to change the octave while playing, rather than moving your hand rapidly up and down the playing keyboard. Experiment — with practice you should see this is often easier than rapidly moving from the lower part of the playing keyboard to the upper part, and vice versa.

CHANGING WAVEFORM


When your computer is first turned on with the **MUSIC MACHINE** cartridge installed, the **WAVEFORM** indicator will show " " indicating that the type of sound that will be played at that point is the sawtooth waveform, which has a brassy quality.

If you play note 'C' for example, then press 'WAVEFORM SELECT' (the Z key), and then play 'C' again, you should hear the note has a different sound quality (timbre), the square wave. The WAVEFORM indicator will now show "  ". The available waveforms are:

Triangular 

Sawtooth 

Square 

Narrow Pulse 

SELECTING NUMBER OF VOICES

When your computer is first turned on with the MUSIC MACHINE cartridge installed, the VOICES indicator will show "1", indicating that only one note will be heard at any one time. This means that when you play one note, 'C' for example, and then play another note right away, the first note will be halted by the second note which, in effect, replaces the first note played.

If you now press the 'VOICE SELECT' key (the right SHIFT key), changing the indicator to "2", two notes can be heard at the same time. Since you are in "DECAY" mode at first (more about that later), each note decays when played, as on a piano, so to hear a number of notes before they die away and are gone, you must play them fairly rapidly. Having "2" active voices means that two notes can be played, let's say note 'C', then note 'E', but when a third is played, the first ('C') will be halted. Only two can be heard at any one time.

If you press the 'VOICE SELECT' key once more, all three voices will be active, and the sound now becomes more orchestrated, rather than a soloist.

SELECTING KEYBOARD MODE

When your computer is first turned on with the MUSIC MACHINE cartridge installed, the KEYBOARD indicator will show "DECAY", indicating that each note decays when played, as on a piano.

By pressing the 'KEYBOARD SELECT' key (the C = key), the KEYBOARD indicator will change to "SUSTAIN". If you now play a note, you'll see that the note remains on for as long as you press the key. This allows you to play your computer more like an organ.

By pressing the 'KEYBOARD SELECT' key again, the KEYBOARD indicator will change to "HOLD". If you now play a note, you'll see that the note remains on continuously. Dependent on the number of playing voices, you can hold one, two, or three notes simultaneously.

SELECTING KEYBOARD EFFECT

When your computer is first turned on with the MUSIC MACHINE cartridge installed will show "NONE", indicating the notes will be played without special effects.

By pressing the 'EFFECT SELECT' key (the left SHIFT), the EFFECT will change to "GLIDE". If you now play a few notes, you'll see that the tone glides from one note to the next. In "SUSTAIN" or "HOLD" KEYBOARD mode, you'll see the "GLIDE" effect more clearly.

By pressing the 'EFFECT SELECT' key again, the EFFECT indicator will change to "VIBRATO". If you now play a note, you'll see that the tone is played with vibrato (rapidly changing frequency, going up, then down, and up again, continuously). This is best used in "SUSTAIN" or "HOLD" mode.

By pressing the 'EFFECT SELECT' key once more, the EFFECT indicator will change to "SPECIAL". This is where each note played is sounded through two voices at

the same time, to give a richer harmonic quality to the note. You will notice the difference immediately. The number of active voices is meaningless in this mode, so it is reset to 1, and cannot be changed while in this mode.

RHYTHM ACCOMPANIMENT

The percussion section allows a number of different percussion sequences to be played while you are playing. Since the rhythm accompaniment uses one voice, only 1 or 2 voice modes can be selected (i.e., 3 voice mode is not allowed), because the music synthesizer chip has only three voices.

By pressing the 'PERCUSSION ON/OFF' key (f1), a beat will begin. The 'TEMPO UP' (f5) and 'TEMPO DOWN' (f7) keys allow you to change the speed. If you have a paddle game controller attached in port 1, that will be your tempo control.

There are seven different rhythms built in for you to choose from with the 'RHYTHM SELECT' key (f3).

By starting out with a slow tempo, you can help yourself to improve your playing by slowly increasing the tempo.

PITCH CONTROL

You may wish to play your Commodore 64 computer with the MUSIC MACHINE cartridge along to songs on a radio, television, record player, or tape. A pitch control adjustment was included to allow for differences between the tuning of the cartridge, and the music being listened to. The 'PITCH UP' (the C key) and 'PITCH DOWN' (the X key) can be used to adjust the pitch of the sound(s), and can also be used to actually transpose the keyboard with experimentation.

INSTRUCTIONS TO MUSIC MACHINE

Command	Key
Notes (keyboard starting at 'C')	Q through up arrow (entire second row)
Sharps	2,3,5,6,7,9,0, - ,pound sign
Keyboard (holding the notes)	Commodore key three choices of sustain, hold, and decay
Effect	SHIFT on the left four choices of none, glide, vibrato and special
Waveform	Z key triangular, sawtooth, square, and narrow pulse
Number of voices	SHIFT on the right
Change the octave:	
raise	CRSR left
lower	CRSR down
Percussion:	
ON/OFF	f1
RHYTHM SELECT	f3
TEMPO UP	f5
TEMPO DOWN	f7
Pitch control:	
up	C key
down	X key

Commodore 64

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This cartridge may only be used with the Commodore 64 system.